Intervening effects of agility and adaptability: Supply chain for nanostores of high performance during the COVID-19 pandemic

Mario R. Acevedo-Amaya, PhD. [1], Cesar H. Ortega-Jimenez, PhD.[2]
[1]Facultad de Ciencias Economicas, Administrativas y Contables, UNAH, Honduras, *mario.acevedo@unah.edu.hn*,
[2]Facultad de Ingenieria, CURLP, Universidad Nacional Autonoma de Honduras, Honduras, *cortega@unah.edu.hn*

Abstract– Researchers have contributed to the supply chain (SC) field in terms of agility and adaptability. However, it is not well known if the operations of nanostores in technology, innovation, infrastructure, and market impact agility, adaptability, and operational performance in nanostores and even less in emerging markets, where small distributors manage to a certain degree the practices of nanostores operations. A literature review was done to identify variables and their items to design a structured questionnaire that was pretested with supply chain experts. We conducted an empirical study on a sample of 472 nanostores from Honduras. Data were collected during the COVID-19 pandemic in 2022. The hypotheses of the research model were tested using the mediation effect by the Serial Multiple Mediator Model method proposed steps. We further checked the mediation significance using the Bootstrapping test. Results show that agility is a strong determinant (i.e., mediator or intervening effect) between SC and performance: nanostores are reacting in an accelerated way to the market. Adaptability is found not to mediate between supply chain and performance: nanostores do not reach adaptability due to technology limitations, changes in structures, innovation, and technification. To improve nanostore adaptability, technological inclusion, predictive programs, and a better understanding of the market must be increased.

Keywords-- Nanostore, COVID-19, Agility, Adaptability, Operational Performance, Mediation, Supply Chain.

I. INTRODUCTION

Improving the agility and adaptability of the supply chain (SC) allows the organization to achieve high performance and competitive advantage [1]. Nonetheless, SC operations have changed and become more volatile due to the COVID19 pandemic, globalization, and short product lifecycles [2]. These become relevant for all SC firms, including SC involving nanostores [3]. Nanostore is a small traditional retail store that differs from chain convenience stores, supermarkets, and hypermarkets in their size, distribution, sales processes, inventory, and operations: it is a single store, where decisions go through a single command (owner), operated as a family business [4]

There are more than 50 million nanostores (12 million in India, 6 million in China, and 32 million in; Mexico, Indonesia, Nigeria, Brazil, Colombia, Paraguay, and Central America). The nanostore market share in Latin America reaches 50%, and in Africa reaches 85%. Nanostore represents 30% of the Central American market, with more than 10 million consumers [4]. Over the last five years, and more relevant during the COVID19 pandemic, customers have been going to nanostores to buy for their daily needs, such as groceries, drinks, vegetables, meat, bakery, prepared food, cleaners, etc. [5]. Nanostore represents at least 30% of the fast-moving Consumers Goods (FMCG) market. Nanostores are a fast and low-cost way to drive the product of FMCG from companies to the final customer. Nanostores are a fast and low-cost way to drive the product of FMCG from companies to the final customer [3].

Nanostore is changing its operation models through agility and adaptability [3]. Nanostore structure, distinctive composition, and market behavior become relevant areas because they energize microeconomies and explain the FMCG Supply chain's performance [6]. Over time, agility and adaptability have become intervening factors that contribute to supply chain relationship improvement. At the same time, agility and adaptability assure the internal performance of organizations, their customers, and suppliers. Despite this, SCs face new problems every day that go way beyond the traditional issues of supply and uncertain demand due to the impact of worldwide disruptive events such as the COVID-19 pandemic [7]. With the COVID19 pandemic, many countries agreed to a total or partial lockdown, causing an economic crisis that affects FMCG SC. With the COVID19 pandemic, many countries agreed to a total or partial lockdown, causing an economic crisis that affects FMCG supply chains. The isolation measures from the COVID19 pandemic changed consumers' behavior, such as purchase frequency, quantity, and variety of products, buying channels, as well as payment methods, resulting in the closure of some nanostores or a decrease in some nanostores operational performance [7].

One of the biggest challenges for FMCG and nanostores during the COVID19 pandemic was to increase nanostore performance by improving agility, adaptability, and the last mile. (e.g., getting goods to the final consumer in an agile, efficient, and better-performing way, due to poor infrastructure, crowding in their areas, reputation, and failure to build deep relationships with consumers) [8]. In the last five years, researchers have been explaining the effect of agility and adaptability along SC, but little investigation analyzes the intervening role of agility and adaptability in the nanostore supply chain (mediation effect). Most of the research has focused on generally analyzing nanostore performance without having representative samples [4][9][10], among

others, reducing the potential errors when testing statistical inference about the nanostore supply chain performance [11]. In this sense, this study represents the first effort to analyze small traditional retailers in an emerging economy (i.e., nanostores of Honduras, and Central America).

Hence, this research aims to analyze the effects of the agile and adaptable supply chain on nanostore performance during the COVID-19 pandemic. To achieve that, First, we conduct a comprehensive study of the nanostore to analyze its operation and types. Second, we test the intervening effect of agility and adaptability over the supply chain and nanostore performance, to demonstrate if either or both are affecting nanostore SC, and show that even in developing economies, there is a high, medium, and low nanostore performances [8]. Thus, in section 2, we discuss the concepts and develop a brief review of the bibliography related to the impacts of SCM, agility, and adaptability on performance. We present some relationships from the framework of this study, the models proposed, and the hypotheses described. Section 3 describes the research method used in this article. Section 4 shows the results. Finally, Section 5 presents the conclusions and final considerations, highlighting future research.

II. LITERATURE REVIEW

At least two-thirds of the population in developing countries shop at nanostores, to satisfy daily needs [12]. Nanostore is a small store (≤15 m2 [4]), operated as a family business with a single manager (owner) who makes all decisions. Consumers go to nanostore for proximity, time, and convenience [13]. This business serves less than 100 houses in a neighborhood, with direct delivery of products. Its owner has a great deal of knowledge of customers' profiles, influencing the decision of products or brands customers consume. Although these stores offer credit to their customers to keep and generate loyalty within their neighborhoods; nanostores must buy in cash most of their inventory, with some supplier companies offering credit lines with short payment terms. Cell phones and smartphones are the most used at the point of sale since such technology is a low-cost way to order, communicate and pay suppliers and customers [3]. Few stores use mobile applications for location, tracking, and payment. Some nanostores offer home delivery, with extensive working hours, under the framework of the informal economy (they don't pay taxes, employment contracts, etc.). The products for sale are individual or low quantities. Customer portfolios usually are in ranges of hundreds, with limited storage space, with orders to suppliers daily, weekly, and every two weeks, located in areas with high population density [10], with supply chains that demand greater integration to be more agile to achieve higher operational performances [14]. Achieving an agile supply chain implies that organizations must respond fast to demands or supply changes.

In addition, adaptability consists of adjusting the supply chain design to market changes [1][15]. SC agility and adaptability depend on the following [7]: 1) characteristics of individual organizations participating in a supply chain: 2) supply chain characteristics (interactions); 3) key performance indicators (KPIs) for long-term sustainability; and 4) factors promoting external disruptions (factors influencing uncertainty). Agility in nanostores can be assessed by the dimensions proposed by Reference [16]: 1) short-term market sensitivity, the ability to detect short-term changes in supply and demand; 2) volume flexibility, the ability to adapt product volumes to respond to short-term changes in supply and demand; 3) variety flexibility, the ability to adapt the product range to respond to short-term changes in supply and demand. Adaptability can assess: 1) the organizational design of SC, the ability to change SC processes and structures following market changes; 2) the use of technology, the capacity to introduce new technologies in processes, products, and information systems based on the detection of technological cycles; 3) knowledge of the market in the medium and long term; capacity to detect trends and possible changes in the medium and long term in the market in which the CS operates. Thus, the previous dimensions related to agility and adaptability support the theory of the nanostore supply chain's impact on small retail operational performance [17].

The operational performance of small businesses depends on their resources and can be assessed by the theory Resource-Advantage, and Resource-Based Theory [18]. Also, small businesses' performance goes through the planning processes carried out by organizations. These can be high, medium, and low performance [19] differentiated by functions, coverage, business size, market planning, financial planning, personnel planning, and inventory planning [19]. Many factors lead to operational performance, from the traditional ones focused on labor, capital, and location, to new trends such as a Reference [8] model that proposes to concentrate the evaluation of operational performance on turnover inventory, because the latter indicates the displacement, provides a snapshot of productivity compared to total factor productivity. At the same time, measuring nanostore performance through turnover inventory is the fastest way to obtain cash, in economic constraint scenarios such as lack of money, inflation, high-interest rates, and unemployment.

They also propose to check performance considering the approach proposed by Reference [20] differentiated into three levels: 1) high-performance nanostores (those with many outlets, modern payment methods, focused on maximizing profits, and more professionalism); 2) medium-performance nanostores (Large quantity of customers, moderate payment method, customer volumes, medium inventories, focused on growth, greater inventory variety); and 3) low-performance nanostores (small size, few product varieties, low customer volume, family, and subsistence, run as an informal business). The above shows how the nanostore, despite their empirical operations, with any supply chain change, from an available or improvement of operative or financial resources, can benefit supply chain integration to make their operations agile and adaptable to market changes. Thus, the research hypothesis is

Agility SC and Adaptability SC have an intervening effect between SCM and OP.

III. METHODS AND PROCEDURES

The research measures supply chain agility, adaptability, and nanostore operational performance practices in small retail in an emerging economy, particularly in Honduras and Central America. The leading retail companies in Honduras reveal that there are between 50,000 to 150,000 different points of sale, equal to an equal number of nanostores. Thus, the sample used in the research was probabilistic, applying a structured survey of 472 nanostores in Honduras collected during 2021-2022. The variables used in the research were Agility, Adaptability, and Operational Performance. We made a descriptive and inferential analysis twofold; 1) to characterize the nanostores in their environment, separating them according to their performance; and 2) to estimate the intervening effect of agility and adaptability along the supply chain and operational performance. To test the research hypothesis, Hayes's method was used [21][22]. The measure of the intervening effect (mediation) was made using the OLS method through the Serial Multiple Mediator models, whose estimation has focused on cross-sectional data [23][24].

$$M1 = iM1 + a1X + eM1 \tag{1}$$
$$M2 = iM2 + a2X + d21M1 + eM2 \tag{2}$$
$$y = iy + c'X + b1M1 + b2M2 + ey \tag{3}$$

Serial multiple mediator models investigate X's direct and indirect effects on Y while modeling a process in which X causes M1, which in turn causes M2, and so forth, concluding with Y as the final consequence. The results show a Cronbach´s alpha of 0.7 [21][25]. The calculation of the intervening effect is test 1) The total effect, 2) the c' value quantifies the direct effect of X, and 3) the Indirect effect. In turn, the product of the coefficients a, d, and b quantify the indirect effect of X on Y through M. [2]. (See Fig. 1)
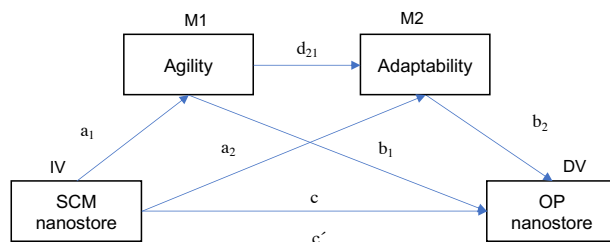

Fig. 1 Intervening effect of SC Agility and Adaptability along SCM and OP.

IV. RESULTS AND DISCUSSIONS

A. Nanostore characterization

First, we describe all the nanostore demographic characteristics. When we asked about the time the nanostore has serving its neighborhood (years of operating) the owners responded that: 1) 26.7% of nanostore have more than ten years of operation; 2) 16.3% of nanostores have five to ten years to operate; and 3) 15.9% of nanostores have three to five years to operate; 4) 17.1% of nanostores have one to three years of operation, and 5) 24% of nanostores have been operating for less than one year. 59% of these stores have more than three years of operation. The nanostore facilities are in owners' homes. The owners use the front yard, dining room, or garages to serve clients. 68% of the nanostore spaces used for sale reach 6 to 8 mts2. In some neighborhoods, there are nanostores with more than 12 m^2, which are considered small markets and grocery stores, owned by Chinese nationals. The nanostore has a low capacity for expansion and growth. Only 16.1% of the sample have a second or third point of sale, while 84.9% do not have another store. Distribution processes are the key to reaching new markets and meeting customer needs. Hence, 16.1% of nanostore have their distribution service. 5.5% of nanostore have outsourced delivery services. 8.7% used delivery services during the COVID19 pandemic, and 71.6% of nanostore have no delivery. Sales variations permit the measurement of nanostore operational performance indicators [8]. Results show that 54.7% of nanostore have daily sales from 0 to 100$ (monthly sales from $1000 to $3000). 17.4% of nanostores report daily sales of $100 to $150 (monthly sales of $3000 to $4500). 28% of these stores reported sales up to $150 per day, reaching monthly sales of more than $4500. These stores operate in most cases in residential areas with high customer traffic. As to outstanding payments to suppliers, 61.5% of nanostores have loans of $0 to $250 (payable in 8 to 15 days). 25.2% have loans of $250 to $500, 8.6% have loans of $500 to $1000, and 4% have loans of more than $1000.

Daily sales have two modalities, one in cash and the second in credit sales. 32% of nanostores sell 90% in cash and 10% with credit. 29.9% of stores sell 100% cash, 12.5% of the stores sell 80% cash, and 20% use credit. 8.9% sell 70% cash and 30% through credit, 5.5% of the stores sell 60% cash and 40% using credit, and 10.4% of the stores sell 50% cash and 50% using credit. Regarding the customer portfolio, 41.3% of nanostores have a customer portfolio of around 50 to 100 clients. 31.8% of nanostores have a customer portfolio of fewer than 50 customers. 17.8% of nanostores serve several customers (100 and 200 clients), and 9.1% of nanostores analyzed have more than 200 clients in their portfolio. The credit conditions offered to the nanostore by suppliers are: 49.2% only allow them to buy cash. 24.8% indicated that the supplier offers: 15-day credit, and 18.2% have 8-day credit. Also, 12.5% have 30-day credit, and 6.4% have daily credit. Such suppliers work either as independent companies or on commission. So, they determine the credit policies and conditions. The stores' suppliers are 41.1% distribution companies. 36.7% delivery trucks and companies sales force, 26.1% outsourced companies of mass consumption products. 29.7% buy the inventory in independent warehouses or supermarkets (Walmart, Pricesmart, La Colonia, Despensas, Maxidespensas, etc.) because the price per unit is lower when they buy a high volume of products, and they have more

options to pay. Finally, 19.7% of nanostore get their inventory in a local marketplace. We consulted shopkeepers about the first brands that come to mind. At the top of the list of brands, the owners of the nanostore have such as first position Coca-cola, followed by Sula, Pepsi Co, Leyde, Bimbo, and Yummies. These brands have worldwide prestige and work with merchandising strategies in all their points of sale, with high recognition among nanostore customers (see Table I).

TABLE I
TOP 20 COMPANIES ON THE MINDS OF NANOSTORES OWNERS

Company	Mentions of shopkeepers	Company	Mentions of shopkeepers
Cerveceria Hondureña Coca cola	244	Cargill - Pollo norteño	18
Sula de Honduras	183	Codis	17
Pepsi CO	152	Bocadeli	15
Derivados de Lacteos Leyde	101	Cargill - Delicia	13
Bimbo	88	Dimerca	13
Dinant - Yummies	103	Unilever	10
Diana	67	Cadeca - Pollo rey	9
Aguazul	41	FEESA Embutidos Europea	8
Frito Lay	29	Nestlé	8
Helados Sarita	29	DEMAHSA Maseca	7

We measure the quantity of nanostore inventories. 46.7% of nanostores have a total of 0 to 1,000 units. 30.7% have 1,000 to 5,000 units. 14.8% have an inventory of 5,000 to 10,000 units, and 7.8% have more than 10,000 units in their total inventories. The levels of broken, damaged, and expired products are very low (42.2% of stores), medium (31.8% of stores), and 26% of stores have a high level of damaged products). Related to customer complaints about damaged, expired, or broken products, 64.6% of nanostore owners said it's very low. 21% of shopkeepers said it's low. 14.5% of shopkeepers said it was medium. The following table lists the different categories available in the nanostore during the COVID19 pandemic. We emphasize the inclusion of products related to medicines, personal care, and biosecurity products, due to the lockdown and safety measures required throughout the pandemic (see Table II).

TABLE II
INVENTORY MIX PRESENT IN NANOSTORES

Category	Nanostores	Category	Nanostores
Snacks, cookies, candies, chewing gums	412	Fruits and vegetables	227
Personal care	386	Liquors and cigars	178
Home care	365	Medicines	294
Groceries	226	Stationery & supplies	221
Basic grains	316	Clothing and footwear	55
Dairy products	363	Household utensils and tools	76
Meats and sausages	319	Fast-food	222
Pastries and Bakery	216	Varieties (toys, games, etc.)	122
Non-alcoholics Beverages	329	Entertainment (gambling machines, video games)	35

Also, we analyzed the competition during the COVID19 pandemic. The results show that 7 out of 10 nanostores compete with similar stores. In some neighborhoods (low-income class), we can find a nanostore approximately every 50-100 mtrs2. The distance between rivals increases in the Residential zones (150 – 300 mtrs2). Furthermore, 23.3% of nanostores have direct competition from "Mercaditos", which are businesses with a greater volume of products, clients, categories, etc., than a nanostore but less than a supermarket. Nowadays, the supermarket chains like Walmart and La Colonia (the two big chain supermarkets in Honduras) created a new business model. A smaller store (convenience retail channel) operates in neighborhoods of low income, offering more categories of products with low prices and more payment methods than nanostore, representing direct competition for this sector. At least 5.3% of the nanostores have a supermarket or a new model of the supermarket (Convenience store) nearby.

Moreover, 5.1% of nanostores compete directly with bodegas, which are business models bigger than nanostore, mercaditos, and in some cases than a supermarket, that is in the marketplace. 1.3% of these businesses have direct competition such as convenience stores (Circle K and Uno stores).

TABLE III
BEST OPERATION PRACTICES IN NANOSTORES

Best Practices	4 mts²	6 mts²	8 mts²	12 mts²	+12 mts²	% Nanostores
A daily cleaning, counting and rotation of my inventory.	56	72	99	79	52	76%
Improved planning and decision making	19	38	47	39	33	37%
Management and review of product quality	36	46	54	43	42	47%
Improving customer service daily	38	67	75	62	47	61%
Improving my relationships with suppliers	29	43	41	42	36	40%
Controls that make visible how I operate	12	21	24	19	22	21%
Controls to determine how much I invest and earn daily in the business	17	33	35	33	29	31%

Innovation and technological inclusion results reveal a significant increase during the COVID19 pandemic. 31.6% of nanostores use or have used some software to control inventories. 34.5% of nanostores have used or are using software or mobile applications to take orders from customers remotely. 21. 4% of nanostores include technology through payment mechanisms (electronic wallets) (see Table III)

Also, 19.7% of these stores use technology to access suppliers' platforms to place orders or send information on point-of-sale management. 16.3% of nanostore use programs for invoicing products at the cash register using computerized methods and tools. Also, we evaluated the best operation practices (i.e., turnover inventory, planning, product quality, relationship with customers and suppliers, decision-making, control, etc.) used by the nanostores. (See Table III)

Table III shows that the medium size nanostore (6-8 mts2) executes the basic best practices such as daily cleaning, inventory rotation, etc. The bigger nanostore is improving customer service daily and daily cleaning. Also, it's known that all nanostore has a low effort to control to determine; how much they invest and earn daily in the business, and the control to make visible the store operation. This to the low level of education and low company support. Existing empirical management of finances and the informality of nanostore operations means that at least 67.4% of nanostores use their funds to finance their operations. Nanostore can´t access different bank products like revolving or consumer credit. Some 28.4% of nano-shopkeepers operate with their funds plus loans, while 7% use loans or capital for their operation. 14.2% of the shopkeepers have used and continue using a familiar to finance their businesses. 10% fund their operations with credits from suppliers.

TABLE IV
LEVEL OF AGILITY AND ADAPTABILITY

	Low		Medium	High	
Level of agility and adaptability of the nanostores	**1**	**2**	**3**	**4**	**5**
Changes to adapt to the new way of selling	60	93	160	89	70
Changes to identify new customers	43	98	166	107	58
Changes to identify new suppliers	45	101	150	110	66
Changes in supplier sales requirements	45	120	163	100	44
Changes in payment methods	100	114	129	73	56
Changes in purchasing methods	56	104	156	101	55
Changes in product prices	43	119	162	91	57
Changes in competition (new businesses nearby)	64	108	147	86	67
Technological changes	105	110	145	72	40

Due to the importance of the nanostore for FMCG companies, these carry out actions to improve the agility, adaptability, and operational performance of this sector. A total of 33.3% of nanostore have received support for training in sales and customer service. 19.7% received support related to the inclusion of technology. 12.2% about inclusion in digital platforms, and 34.1% over the business organization. 23.8% received support for inventory and quality management, 12.9% for financial management, and 15.8% for the supply chain management. Finally, we present the levels of agility and adaptability of the nanostores (see Table IV).

The results of Table IV show that nanostore has the potential to identify new customers, suppliers, and sales requirements. But show a low level of agility and adaptability to respond to purchasing methods, product prices, and technology changes. These are for the level of education, infrastructure, and capital to invest. Also, the aim of the business model and knowledge about operation management had nanostore owners. At the same time, it details the classification of nanostores according to their performance, evaluating the level of agility, adaptability, and operational performance. Classifying them as; high performance, medium performance, and low performance. Only 13% of nanostore show levels above the average (high performance), although these are still low (measured on a scale of 1 to 5). Also, 73% of nanostores show below-average performance, with limited structures and resources to grow and cope with market demands (see Table V).

TABLE V
HIGH-PERFORMANCE NANOSTORE CLASSIFICATION

Perform ance	Qty nano store	Operational performance Level	Agility Level	Adaptability Level	SCM Level
High	64	3.549	2.767	2.573	2.379
Medium	407	2.741	2.600	2.500	2.230
Low	1	1.333	1.400	1.417	1.455

B. Model testing

The model employed is the Serial Multiple Mediator Model proposed by Hayes (2018), where M1 = iM1 +a1X+eM1, M2 =iM2 +a2X+d21M1+eM2, and y=iy+c'X+b1M1+b2M2+ey. Under the assumption estimates serial multiple mediator models to investigate X's direct and indirect effects on Y while modeling a process in which X causes M1, which in turn causes M2, and so forth, concluding with Y as the final consequence. The results show an alpha of 0.7, standard deviations less than 0.6, and significant correlation levels between the variables under study. (See Fig.2. The results show a partial intervening effect (partial mediation) (see Figure 2). The direct effect is reduced but significant. Agility shows a causal relationship with adaptability, but both do not mediate nanostore operational performance. Only Agility mediates the relationship between supply and nanostore operational performance. It is congruent with the results of nanostore characterization, which reveal that nanostores are agile (stores have been resilient to the changes generated by the COVID19 pandemic), modify their volumes, and change the variety of their product to be in line with demand.
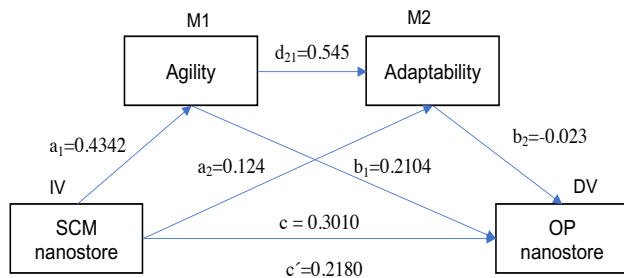
	Effect	BootSE	BootLLCI	BootULCI
TOTAL	0.083	0.0264	0.0334	0.1376
Ind1	0.0914	0.0262	0.0423	0.1441
Ind2	-0.0029	0.0069	-0.0172	0.0112
Ind3	-0.0055	0.0123	-0.0292	0.0191
(C1)	0.0942	0.0289	0.039	0.1522
(C2)	0.0969	0.0327	0.0342	0.1628
(C3)	0.0026	0.0073	-0.0102	0.0203

Fig. 2 Results of Serial multiple mediator models test (Intervening effect of SC Agility and Adaptability along SCM and OP).

Also, adaptability does not mediate the relationship due to their low nanostore capacity to change the structure or operations. At the same time, nanostores evidence low technology inclusions due to resource problems of both nanostore and distribution firms, lack of information systems to detect and react quickly to the market, and absence of detection of market trends.

IV. CONCLUSIONS AND FUTURE RESEARCH

Nanostore is effective means for the distribution of products of mass consumer firms, representing a significant market share for any firm and daily exposure to its products and services. Therefore, agility, adaptability, and performance guarantee the survival of nanostores in the market. At the same time, that explains at least 30% of the sales performance of large companies. The results of the research are consistent with those proposed by Reference [3], which indicate challenges in terms of infrastructure (low access to technology, mobile applications, and software for managing operations), difficulties in improving the flow of information, access to energy, and capital to expand the business. Value-added services are limited. Few nanostore have a contract with delivery programs or companies. Although payment methods improved during the COVID19 pandemic, being more agile and better, due to the customer access to electronic wallets and the banking of the sector. However, these new payment methods are still limited and are frequently in residential areas (neighborhoods of medium and high-income). Besides, cash flows are conditioned to the cash and credit sales cycle, affecting future purchases and inventory movement. Despite the use of technological platforms to order inventory, such as Coca-Cola platforms, suppliers' sales to nanostore continue to be face-to-face. The lines of credit available to nanostores are pre-established by the supplier and not by any other external agents (e.g., banks, cooperatives, etc.). There are still problems to improve the efficiency of the last mile, such as limited and high-cost storage space, low inventory levels, scarce, short operating hours, and scarce formal credit, among others.

There are many challenges to changing the current structure of nanostores to be more dynamic and have spaces that allow for delivery and commerce from digital platforms. The financial cost is high, and nanostores rely on supplier credit and revolving resources (credit cards). Large distributors get products at low prices. Nanostores need to focus on improving their assortment and offering a wide range of products to their consumers, to avoid their customers going to supermarkets or other stores to buy these products; hence, nanostores would require digitalization and technology implementation to bring owners closer to their customers and suppliers. In future research, it is necessary to analyze the participation of the government and suppliers to boost the sector, the support to formalize the operations of this sector, the analysis of the current infrastructure, and the existent gaps for digitization. Also, future research can include the study of SC alignment, given that the current state of operations makes it difficult to analyze the interest of all actors in the analysis and what is required to create a triple-A in the nanostore in emerging markets [1]. Finally, studying the factors that restrict or strengthen adaptability is necessary to build programs that consolidate the nanostore agility, at the same time, improve, in the short term, the operational performance and guarantee the nanostore growth in the medium and long term.

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